



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|-----------------------|---------------------|------------------|
| 10/798,654 | 03/11/2004 | Stephen Patrick Gavin | 5555CIP | 6418 |
| 44341 | 7590 | 05/31/2005 | EXAMINER | |
| JACOBSON & JOHNSON ONE WEST WATER STREET, SUITE 285 ST. PAUL, MN 55107 | | | KRAMER, DEVON C | |
| | | ART UNIT | PAPER NUMBER | |
| | | 3683 | | |

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------------------------|-------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/798,654 | GAVIN, STEPHEN PATRICK | |
| | Examiner Devon C Kramer | Art Unit 3683 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 May 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 23 and 24 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-22 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

- 1) Claims 2-10 are objected to because of the following informalities:

Claim 2 line 2, "the sides" should be –sides–. Appropriate correction is required.

Claim Rejections - 35 USC § 102

- 2) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 3) Claims 1 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Dunn et al (5542503).

In re claims 1 and 22, Dunn et al provides a disc brake rotor having a central hub (47) coaxial with and supporting annular rings (44, 45) which are form an inboard brake disc and an outboard brake disc for engagement with brake pads (23,25), the inboard and outboard discs maintained in a parallel spaced apart configuration by pillars (figure 5) with channels (figure 6) defined between the pillars, air being drawn in through vent means (space between the two discs), the pillars arranged in repeating clusters of six with each cluster in cross section including radially aligned inner (46b) outer (46d) pillars with pairs of intermediate pillars (46a, c) positioned symmetrically in a median area of the inboard and outboard brake discs; one pair of the intermediate pillars on each side of a radially aligned central axis defined by the radially aligned inner and outer pillars,

Art Unit: 3683

the intermediate pillars providing supporting the brake discs from distortion, each pair of the pairs of radially aligned intermediate pillars defining a channel between the pillars comprising the pair; the channel offset from a radially aligned direction.

Claim Rejections - 35 USC § 103

- 4) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 5) Claims 2 and 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al (5542503).

In re claim 2, the embodiment of Dunn et al used to reject claim 1 lacks the teaching of the hat having inclined sides.

Figure 1, labeled prior art of Dunn et al teaches inclined sides of the hat, the hat capable of acting as a heat dam.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the hat of Dunn's figure 1 with the rotor of figure 4 to provide a known means to connect the rotor to a wheel and to enhance heat dissipation.

In re claims 11 and 18, Dunn et al is silent to the intervals of the clusters.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the clusters circumferentially at 10 or 20 degree intervals, since it has been held that discovering an optimum value of a result effective variable

involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In re claims 12-17 and 19-20, Dunn et al teaches the arrangement of the inner and outer pillars.

In re claim 21, Dunn et al teaches shapes which can be considered diamond shaped or triangular shaped, but lacks the teaching of alternating shapes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the inner pillars of Dunn et al with alternating shapes merely as a design choice and since it has been held that the shape of a part in a device would be an obvious variant absent any particular evidence that the particular shape of the claimed part was significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)

6) Claims 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al (5542503) in view of Baumgartner (6626273).

In re claims 3-8, Dunn et al provides the cluster arrangement of the pillars and vents on the inboard side, but lacks the teaching of inlet vents on the outboard side of the heat damn.

Baumgartner teaches vent means including vents (see figure 7) on the outboard side of the rotor and contoured vents on the inboard side. .

It would have been obvious to one of ordinary skill in the art at the time of the invention on to have provided the brake rotor or Dunn et al with the vent of Baumgartner merely to increase the air flowing over and through the discs.

In re claim 9, Dunn et al teaches pillars with a similar shape to those of the instant application. It is unclear what applicant means by an overlapping edge, but this term has been interpreted to mean that portions of the pillars overlap.

In re claim 10, Dunn et al teaches shapes which can be considered diamond shaped or triangular shaped, but lacks the teaching of alternating shapes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the inner pillars of Dunn et al with alternating shapes merely as a design choice and since it has been held that the shape of a part in a device would be an obvious variant absent any particular evidence that the particular shape of the claimed part was significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)

Response to Arguments

- 7) Applicant's arguments filed 5/12/05 have been fully considered but they are not persuasive. Applicant argues that Dunn does not teach intermediate pillars that support against mechanical distortion. Please note that this is an inherent feature of Dunn. The intermediate pillars extend between the two discs and provide support between the two. If the pillars were absent in Dunn the outer peripheral edges of the inner and outer discs would be subject to deformation or bending. Further, air does pass between all of the pillars in Dunn et al, it is the amount or flow of air that differs between one pillar and the next.

Conclusion

- 8) **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

- 9) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devon C Kramer whose telephone number is 571-272-7118. The examiner can normally be reached on Mon-Fri 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Devon C Kramer
Examiner
Art Unit 3683

DK

DEVON C. KRAMER
PATENT EXAMINER

Devon Kramer
5/25/05